

What is claimed is:

- 1 1. A speech coding system comprising:
 - 2 an encoder that encodes candidate pulse positions to encode an
 - 3 excitation signal, where the candidate pulse positions are defined by at least one track;
 - 4 a decoder coupled to the encoder; and
 - 5 a circuit coupled with the encoder and the decoder, where the circuit
 - 6 includes an algorithm that dynamically allocates the at least one track.
- 1 2. The system according to claim 1 where the algorithm allocates the
- 2 candidate pulse positions for the at least one track according to available information.
- 1 3. The system according to claim 2 where the available information
- 2 includes information selected from the group consisting of signal type information,
- 3 adaptive codebook information and determined pulse positions.
- 1 4. The system according to claim 3 where the algorithm determines a first
- 2 fixed codebook if the signal type is approximately periodic and determines a second
- 3 fixed codebook if the signal is non-periodic.
- 1 5. The system according to claim 4 where the first fixed codebook
- 2 includes at least one track and the second fixed codebook includes at least one track.
- 1 6. The system according to claim 1 where the at least one track includes
- 2 fixed candidate pulse positions.
- 1 7. The system according to claim 1 where the at least one track includes
- 2 dynamically allocated candidate pulse positions.
- 1 8. The system according to claim 1 where the algorithm determines a
- 2 position of a first pulse on the at least one track and then defines at least one candidate
- 3 pulse position for the at least one track according to the determined pulse position of
- 4 the first pulse.

1 9. The system according to claim 8 where the algorithm defines the at
2 least one additional candidate pulse position near the determined pulse position for the
3 first pulse.

1 10. The system according to claim 8 where the algorithm uses a pitch
2 prediction contribution to derive at least one reference position of at least one main
3 peak from a previously encoded signal to define the at least one additional candidate
4 pulse position according to the at least one reference position.

1 11. The system according to claim 10 where the circuit further includes an
2 energy measure algorithm to derive the at least one main peak.

1 12. The system according to claim 11 where the energy measure algorithm
2 defines the at least one main peak at the position of the pitch prediction contribution
3 including the highest energy.

1 13. A speech coding system comprising:
2 a codec that includes an encoder and a decoder, the encoder encodes
3 candidate pulse positions to encode an excitation signal, where the candidate pulse
4 positions are divided into at least one track; and
5 a circuit coupled with the codec, where the circuit includes an
6 algorithm to dynamically allocate candidate pulse positions according to available
7 information.

1 14. The system according to claim 13 where the available information
2 includes information selected from the group consisting of signal type information,
3 adaptive codebook information and determined pulse positions.

1 15. The system according to claim 14 where the algorithm determines a
2 first fixed codebook if the signal type is approximately periodic and determines a
3 second fixed codebook if the signal is non-periodic.

1 16. The system according to claim 15 where the first fixed codebook
2 includes at least one track and the second fixed codebook includes at least one track.

1 17. A method for dynamically coding a position of a pulsed signal in a
2 speech coding system, comprising:

3 determining a position of a first pulse on a first track;
4 dynamically defining at least one candidate pulse position for a second
5 track according to the determined position of first pulse on the first track; and
6 determining a position of a second pulse on the second track according
7 to the defined at least one candidate pulse position for the second track.

1 18. The method according to claim 17 further including defining the at
2 least one additional candidate pulse position near the determined pulse position for the
3 first pulse.

1 19. A method for dynamically coding a position of a pulsed signal in a
2 speech coding system, the method comprising:

3 determining a pitch prediction contribution from a past excitation
4 signal;
5 determining positions of main peaks according to the pitch predication
6 contribution; and
7 constructing candidate pulse positions for at least one dynamic track of
8 a current sub-frame according to the determined positions of the main peaks.

1 20. The method of claim 19 further including defining candidate
2 positions of a first pulse according to the constructed candidate pulse positions of
3 the at least one dynamic track.

1 21. The method according to claim 19 further including using a pitch
2 prediction contribution to derive positions of main peaks from a previously encoded
3 signal.

1 22. The method according to claim 21 where the circuit further includes an
2 energy measure algorithm to derive the main peaks.

1 23. The method according to claim 22 where the energy measure
2 algorithm defines the main peaks at the positions of the pitch prediction
3 contribution including the highest energies.

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